

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-001242**Date Inspected:** 15-Jan-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China

CWI Name:	ZPMC- Ye Yong Jun, Xu Bing and			CWI Present:	Yes	No
Inspected CWI report:	Yes	No	N/A	Rod Oven in Use:	Yes	No N/A
Electrode to specification:	Yes	No	N/A	Weld Procedures Followed:	Yes	No N/A
Qualified Welders:	Yes	No	N/A	Verified Joint Fit-up:	Yes	No N/A
Approved Drawings:	Yes	No	N/A	Approved WPS:	Yes	No N/A
				Delayed / Cancelled:	Yes	No N/A

Bridge No: 34-0006**Component:** Bay 2 and Bay 3 Observations**Summary of Items Observed:**

On this date, the Caltrans Quality Assurance (QA) representative, John P. Tracy, conducted assessments while on site at Zhenhua Port Machinery Company (ZPMC) for Caltrans Project 04-0120F4-SAS. The following is the detailed review of the following observations:

Bay 1: Submerged Arc Weld (SAW) gantry welder was inactive.

Bay 2 operations: The 77m mock-up had ongoing thermal welding operations for the SAW process under Welding Procedure Specification(WPS) number WPS-B-T-2221-C-U2b-S for weld number MUA-MA1 D/F-13B (Plate A to Plate E attachment weld), which was made by ZPMC welder Xia Yongliu (048882). ZPMC Certified Welding Inspector (CWI) Xu Le Feng was present and actively taking welding parameters. Observed values appeared to be in accordance with the criteria set forth within the contractual documents.

114m upper and lower mock-up sections were both been removed to the machining bay for edge preparation. Caltrans Task Leader, Mr. Jimmy Cochran, was notified that the Caltrans representative had not observed this phase of the process and made the request to do so.

Thermal Oxygen/fuel (Oxy/Fuel) Cutting Station: 75mm-HPS-485WT2 plate was being cut for diaphragm production component. The paperwork observed, by the Caltrans representative, did not indicate the elevation for which the component belonged.

MUSB-MA26-1 and -2 shear links had ongoing thermal welding operations for the Shielded Metal Arc Weld

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(SMAW) process under WPS-B-T-3212-TC-U5b for weld number MUSB-MA26-30A AND -30B (Web to Flange attachment weld), which was made by ZPMC welder Han Xiaofeng (054467). This is a American Society of Testing Materials (ASTM) A709 Gr485 to A709 Gr485 weld being fabricated with Excalibur 9018M-HR4 electrode. ZPMC Certified Welding Inspector (CWI) Xu Bing was present and actively taking welding parameters.

Observed values appeared to be in accordance with the criteria set forth within the contractual documents.

89m MUSB-MA29 Cross Brace has had heat straightening operations performed plus flange to inner, and outer, stiffener attachment welds have been tack welded and have root passes already in place, however the component remains incomplete and inactive.

New Tower Mock-up Bay: 89m mock-up had welding operation ongoing. Longitudinal stiffeners to Diaphragm attachment welds were being welded with SMAW process. Joint number MUB-MA21 G/J-13 and MUB-MA21 A/J-18 are ASTM A709 Gr345 to Gr485 fillet welds being made with THJ-506Fe electrode under WPS B-T-4113-2. ZPMC welders (-18) Fu Yanjie (066268) and (-13) Guo Dengyun (037997) performed the welding. Joint number MUB-MA21 G/J-14 and MUB-MA21 A/J-17 are ASTM A709 Gr345 to Gr345 fillet welds being made with TL-508 electrode under WPS B-P-2113. ZPMC welders (-17) Du Henghua (037779) and (-14) Liu Shouhai (066456) performed the welding.

Plate E to Plate A attachment weld, number MUB-MA21 D/J-1B under WPS B-T-2232-TC-U5-F, was being prepared with a mechanical grinder, upon the Caltrans representatives arrival. Active ceramic heater pads were in place on the external side of the joint. No welding was observed for this weld number.

NOTEPlate E to Plate D and Plate D to Plate C were in the tack weld phase. QA observations on the fit-up of these two joints was conducted prior to the assembly being moved into the new tower mock-up bay. A tight, closed joint was noted.

During the course of the Caltrans representative's surveillance, a gap (maximum 4.2mm) was noted in joint E/D. A smaller but visible gap was also noted in the D/C joint. No ladder was available for physical measurement. Three cracked root passes were noted for longitudinal stiffener to diaphragm attachment welds prior to this discovery (see observational report: January 13, 2008). Inference to this outcome indicates possible misalignment during transport. The Caltrans representative notified the field Bureau Veritas (BV) representative and the ZPMC CWI, Ye Yong Jun, of the findings. They, in turn, indicated that the joint needed to be further addressed. Further results are pending.

Bay 3:

PL77B (SP20) and PL91C (SP44) had thermal operations ongoing upon the arrival of the Caltrans representative. SP20 had oxy/fuel torch preheating and Flux Core Arc Weld (FCAW) tack welding for stiffener to plate attachment welds SP020-01-13 thru -24 under WPS-B-T-2132-2 by ZPMC welders Sun Tiyu (054459) and He Yumei (048625).

SP44 had oxy/fuel torch preheating and SMAW tack welding, with THJ-506Fe electrode, for stiffener to plate attachment welds SP044-01-001 thru -010 under WPS-B-P-2112-FCM by ZPMC welder Wang Zhonghua (053753).

NOTE The Caltrans representative arrived on site, at 1400, to find Seismic Performance Critical Member (SPCM) thermal operations ongoing without a CWI being within visible or audible range. At 1407, the Caltrans representative notified Caltrans Task Leader, Mr. Robert Cuellar, of his findings and was instructed to perform

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usual observations and to note when the CWI arrived for his inspections. At 1439, a ZPMC Quality Control (QC) inspector left his station to retrieve a CWI. At 1441, the Caltrans representative noted American Bridge Fabricator (ABF) representative, Mr. Kevin Dye, walking through the bay and notified him of the findings. He stated that an incident report will be generated. At 1442, a ZPMC CWI arrives on site.

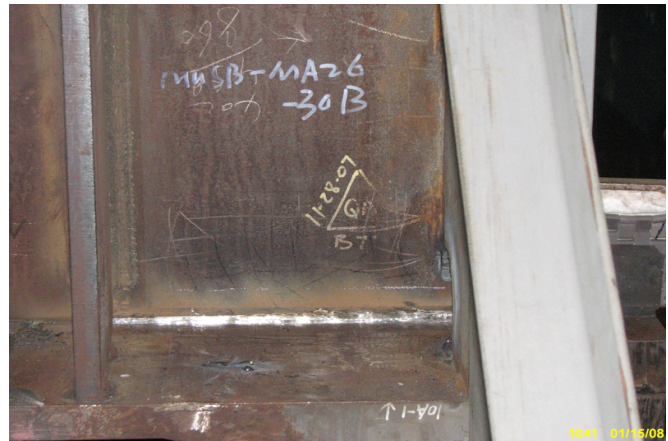
The Caltrans representative was instructed by Caltrans Task Leader, Mr. Robert Cuellar, to generate an incident report based on the observation of this incident.

Included below are digital pictures that support the observations recorded within this report.



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Summary of Conversations:

At the completion of the above stated operations, the ZPMC Certified Welding Inspectors, Ye Yong Jun, Xu Bing and Xu Le Feng, reported that the parameters followed and their noted results were found to be in accordance with the criteria set forth within the contractual documents.

On reporting date 01/08/2008, the Caltrans representative had significant conversation with ABF representative, Mr. Kevin Dye, concerning the above stated incident in Bay 3 and Caltrans Task Leaders, Mr. Jimmy Cochran and Mr. Robert Cuellar, concerning above stated issues with tower mock-up components.

Closure was obtained through Caltrans Senior Level III, Mr. Dave McClary, concerning the previously reported Ultrasonic Testing (UT) inspections on the plate to plate attachment welds for the tower mock-up assemblies. A zero degree and 45 degree Angle Beam Ultrasonic Testing (ABUT) probe will be used along the Face "C" side for all these joints. See observational reports: January 08 and 09, 2008.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

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Inspected By:	Tracy,John	Quality Assurance Inspector
Reviewed By:	Cuellar,Robert	QA Reviewer
